Abstract of the Disclosure

Provided are a self-aligned heterojunction bipolar transistor that can prevent electrical short-circuit caused by the agglomeration during the formation of a silicide electrode, minimize resistance by forming thick base electrodes, minimize the parasitic resistance of the base and parasitic capacitance between the base and the collector, and thus improve the process stability and economical efficiency by ruling out a wet-etching process and performing a selective thin film growing process once, and a manufacturing method thereof. The heterojunction bipolar transistor of this research includes: a collector and a collector electrode formed within a silicon substrate; base electrodes formed on the collector and including a protrusion having a first opening and a body having a second opening for exposing the surface of the collector; a base epitaxial layer grown selectively on the collector exposed thorough the first opening; sidewall spacers formed on the sidewalls of the second opening; an emitter electrode formed on the base epitaxial layer in the shape of an overhang that covers the sidewall spacers; and an insulation layer inserted between the overhang of the emitter electrode and the base electrodes and connected to the sidewall spacers.